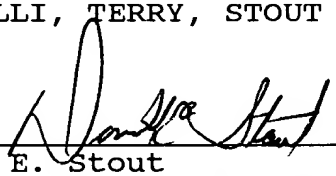
Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. §1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (612.39651X00) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



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Attachment

DES:dlh

"VERSION WITH MARKINGS TO SHOW CHANGES"

CLAIMS

1) A method intended for gradual deformation of a representation or realization, generated by sequential simulation, of a not necessarily Gaussian stochastic model of a physical quantity z in a heterogeneous medium such as an underground zone, in order to constrain it to a set of data collected in the medium by means of previous measurements and observations, relative to the state or the structure thereof, characterized in that it comprises applying a stochastic model gradual deformation algorithm to a Gaussian vector (Y) with N mutually independent variables that is connected to a uniform vector U with N mutually independent uniform variables by a Gaussian distribution function (G), so as to build a chain of realizations u(t) of vector U, and using these realizations u(t) to generate realizations z(t) of this physical quantity that are adjusted to the data.

2) A method as claimed in claim 1, characterized in that a chain of realizations u(t) of vector (U) is defined from a linear combination of realizations of Gaussian vector (Y) whose combination coefficients are such that the sum of their squares is one.

3) A method as claimed in ~~any one of claims~~ 1 ~~or 2~~, comprising gradual deformation of the model representative of the heterogeneous medium simultaneously in relation to the structural parameters and to the random numbers.

4) A method as claimed in ~~any one of~~ claims 1 ~~or 2~~, comprising separate gradual deformation of a number n of parts of the model representative of the heterogeneous medium while preserving continuity between these n parts of the model by subdividing the uniform vector into n mutually independent subvectors.